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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/020,952

12/19/2001

Brian J. Dinkel

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08/11/2004

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER

BHATTACHARYA, SAM

ART UNIT

PAPER NUMBER

2685

6

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,952

Applicant(s)

DINKEL ET AL.

Examiner

Sam Bhattacharya

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 6 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4 an 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Lovinggood et al. (US 6,445,904 B1).

Regarding claim 1, Lovinggood et al. disclose a repeater system for a wireless communication system, including a first antenna 16 operable to transmit an uplink RF signal to, and receive a downlink RF signal from, a base station antenna; a first duplexer 42 connected to said first antenna and operable to receive the downlink, RF signal from said first antenna and direct the downlink RF signal to a first duplexer output, and further operable to receive an amplified uplink signal 50 at a first duplexer input and provide the amplified uplink signal to said first antenna for transmission to the base station antenna; and a first digital channelizer 70

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operable to receive a wideband downlink signal including a plurality of downlink signals each having a different frequency, and digitally isolate a single downlink signal from among the plurality of downlink signals and provide the isolated downlink signal at a first digital channelizer output, wherein the wideband downlink signal comprises a narrower band of frequencies than the downlink RF signal. See col. 3, lines 3-51.

Regarding claims 2, 5 and 6, Lovinggood et al. disclose a second antenna 30 operable to transmit a downlink RF signal to, and receive an uplink RF signal from, a mobile communication unit; a second duplexer 40 connected to said second antenna and operable to receive the uplink RF signal from said second antenna and direct the uplink RF signal to a second duplexer output, and further operable to receive an amplified downlink signal at a second duplexer input and provide the amplified downlink signal to said second antenna for transmission to the mobile communication unit; and a second digital channelizer 60 operable to receive a wideband uplink signal including a plurality of uplink signals, and digitally isolate a single uplink signal from among the plurality of uplink signals and provide the isolated uplink signal at a second digital channelizer output, wherein the amplified downlink signal is an amplified version of the isolated downlink signal and the amplified uplink signal is an amplified version of the isolated uplink signal. Moreover, it is inherent to the system of Lovinggood et al. that the second antenna 30, which is a null antenna, transmits channels into an area in which the base station, due to an obstruction, cannot transmit signals directly, since nulls are created by natural and man-made obstructions that block the RF signal.

Allowable Subject Matter

3. Claims 3 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose a combination of elements in a repeater system, including an analog to digital converter for converting the wideband downlink signal from analog to digital format, a digital channelizer that includes at least one digital down converter that converts a digital wideband downlink signal of a specified frequency to a baseband quadrature version of the digital wideband signal of the specified frequency, and a digital signal processor for controlling the at least one down converter to operate at the specified frequency, as required by claim 3.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lovinggood et al. (US 6,615,021) disclose a repeater for a mobile communication system that includes downlink path having a channelizer with three modules.

Kumar et al. (US Patent Publication No. 2003/0076899) disclose a digital channelizer that includes a quadrature mixer, A/D converters and a digital signal processor.

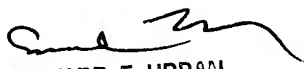
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Bhattacharya whose telephone number is (703) 605-1171. The examiner can normally be reached on 8:30 a.m. to 5:00 p.m., Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sb


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600